5/16/06

# EAST Search History

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L1 | 0 | (713/201).CCLS. | USPAT | OR | OFF | 2006/05/16 12:57 |
| L2 | 0 | (713/200).CCLS. | USPAT | OR | OFF | 2006/05/16 12:57 |
| L3 | 0 | (713/202).CCLS. | USPAT | OR | OFF | 2006/05/16 12:57 |
| L6 | 6103 | 713/200 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/16 13:00 |
| L7 | 7131 | 713/201 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/16 13:00 |
| L8 | 7 | (6 7) and buffer with (segment packet) with sequence adj (number value) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/16 13:01 |
| L9 | 18 | (6 7) and buffer with (segment packet) same sequence adj (number value) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/16 13:04 |
| L11 | 62 | (6 7) and (buffer window) with (segment packet frame) same sequence adj (number value) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/16 13:39 |
| L12 | 254 | (empty discard$3 remov$3) with (buffer window) with (segment packet frame) same sequence adj (number value) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/16 14:22 |
| L13 | 2 | ((prevent$3 near4 attack) and (empty discard$3 remov$3) with (buffer window) with (segment packet frame) same sequence adj (number value)).clm. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/16 14:23 |

# EAST Search History

| | | | | | | |
|---|---|---|---|---|---|---|
| S2 | 195 | ("6061341" "5912878" "6034962" "6272148" "6741555" "6816910" "6092115" "6078564" "6208620" "6006254" "6105064" "6160793" "6212184" "6212184" "5937169" "6115357" "5519699" "5802106" "5828846" "5892903" "5903559" "6038216" "6038606" "6073180" "6091733" "6208653" "6215769" "6215769" "6252851" "6298041" "6370114" "6381638" "6424626" "6434620" "6496481" "6553423" "6611495" "6650621" "6687227" "6700871" "6738821" "6741563" "6742044" "6751665" "6754228" "6757248" "6765901" "6766309" "6788704" "6804201").pn. ("6820269" "6880017" "6894974" "6898640" "6910063" "6922557" "6925060" "6928052" "5987022" "6463044" "6754200" "6937600" "6418128" "6560199" "6085234" "5727142" "6021507" "5878228" "5892754" "6014707" "6202081" "6243846" "6246684" "5646416" "5699521" "5870412" "5931916" "5931961" "5943480" "6002930" "6035418" "6061820" "6061820" "6118765" "6134245" "6151636" "6188677" "6226769" "6226769" "5412654" "5477531" "5530693" "5631905" "5654555" "5706508" "5764894" "5918016" "5951651" "5987517" "5991291").pn. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 13:16 |

# EAST Search History

| | | | | | | |
|---|---|---|---|---|---|---|
| S3 | 96 | ("6061341" "5912878" "6034962" "6272148" "6741555" "6816910" "6092115" "6078564" "6208620" "6006254" "6105064" "6160793" "6212184" "6212184" "5937169" "6115357" "5519699" "5802106" "5828846" "5892903" "5903559" "6038216" "6038606" "6073180" "6091733" "6208653" "6215769" "6215769" "6252851" "6298041" "6370114" "6381638" "6424626" "6434620" "6496481" "6553423" "6611495" "6650621" "6687227" "6700871" "6738821" "6741563" "6742044" "6751665" "6754228" "6757248" "6765901" "6766309" "6788704" "6804201").pn. ("6820269" "6880017" "6894974" "6898640" "6910063" "6922557" "6925060" "6928052" "5987022" "6463044" "6754200" "6937600" "6418128" "6560199" "6085234" "5727142" "6021507" "5878228" "5892754" "6014707" "6202081" "6243846" "6246684" "5646416" "5699521" "5870412" "5931916" "5931961" "5943480" "6002930" "6035418" "6061820" "6061820" "6118765" "6134245" "6151636" "6188677" "6226769" "6226769" "5412654" "5477531" "5530693" "5631905" "5654555" "5706508" "5764894" "5918016" "5951651" "5987517" "5991291").pn. | USPAT | OR | ON | 2005/10/13 13:14 |
| S4 | 64 | (denial adj service) and "ack" | USPAT | OR | ON | 2005/10/13 13:14 |
| S5 | 363 | (denial adj service) and "ack" | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/13 14:02 |
| S6 | 2343 | (709/224).CCLS. | USPAT | OR | OFF | 2005/10/13 13:25 |
| S7 | 28 | S6 and (denial adj service) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/13 13:29 |

# EAST Search History

| | | | | | | |
|---|---|---|---|---|---|---|
| S8 | 645 | 713/170 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/13 13:28 |
| S9 | 279 | (713/170).CCLS. | USPAT | OR | OFF | 2005/10/13 13:29 |
| S10 | 7 | S9 and (denial adj service) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/13 13:40 |
| S11 | 3 | (data adj injection adj attack) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/13 13:52 |
| S12 | 16 | (ack same tcp) same attack same sequence | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/13 14:02 |
| S13 | 294 | (denial adj service) and overlap | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/13 14:02 |
| S14 | 47 | (denial adj service) and ((overlap$4 extend$3) same (discard$4 remove drop$3)) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/13 15:09 |
| S15 | 8692 | (sliding adj window) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/13 15:09 |
| S16 | 1643 | (sliding adj window) and 7??/$.ccls. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/13 15:10 |

# EAST Search History

| | | | | | | |
|---|---|---|---|---|---|---|
| S17 | 880 | (sliding adj window) and 7??/$. ccls. | USPAT | OR | ON | 2005/10/13 15:11 |
| S18 | 93 | (sliding adj window) and 7??/$. ccls. and @pd < "19950101" | USPAT | OR | ON | 2005/10/13 15:12 |
| S19 | 168 | (sliding adj window) and 7??/$. ccls. and tcp | USPAT | OR | ON | 2005/10/13 15:52 |
| S20 | 19 | ((tcp adj (segment packet data frame)) and (discard$3 drop$4 ignor$4 remov$4)).clm. | USPAT | OR | ON | 2005/10/13 15:54 |
| S21 | 1 | ("6829720").PN. | USPAT | OR | OFF | 2005/10/14 11:15 |
| S22 | 1 | ("6829710").PN. | USPAT | OR | OFF | 2005/10/14 11:15 |
| S23 | 1 | ((maximum adj window adj size) and unacknowledged and attack).clm. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 13:17 |
| S24 | 3 | ((maximum adj window adj size) same unacknowledged and attack) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 13:18 |
| S25 | 4 | ((window adj size) same unacknowledged and attack) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 13:19 |
| S26 | 5 | ((window adj size) same unacknowledged same (discard$3 drop$3 remov$4 ignor$4) and 7??/$.ccls.) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 16:51 |
| S27 | 2 | ((window adj size) same overlap$4 with (discard$3 drop$3 remov$4 ignor$4) and 7??/$.ccls.) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 14:30 |
| S28 | 1416 | overlap$4 with (discard$3 drop$3 remov$4 ignor$4) and 7??/$.ccls. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 14:31 |

# EAST Search History

| | | | | | | |
|---|---|---|---|---|---|---|
| S29 | 320 | (packet segment data) with overlap$4 with (discard$3 drop$3 remov$4 ignor$4) and 7??/$.ccls. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 14:33 |
| S30 | 143 | (packet segment data) with overlap$4 with (discard$3 drop$3 remov$4 ignor$4) and 7??/$.ccls. and window | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 14:55 |
| S31 | 37 | (packet segment data) with overlap$4 with (discard$3 drop$3 remov$4 ignor$4) and 7??/$.ccls. and window and tcp | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 14:42 |
| S32 | 5 | (packet segment data) with overlap$4 with (discard$3 drop$3 remov$4 ignor$4) and 7??/$.ccls. and tcp not S31 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 14:52 |
| S33 | 11 | (packet segment) with overlap$4 with (discard$3 drop$3 remov$4 ignor$4) and 7??/$.ccls. and tcp | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 14:55 |
| S34 | 1 | (preventing and reset and denial and service and attacks).ti. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 16:30 |
| S35 | 0 | (mitesh-dalal).in. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 16:31 |
| S36 | 2 | (dalal-mitesh).in. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 16:31 |

# EAST Search History

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|---|---|---|---|---|---|---|
| S37 | 3 | (tcp and segment and ack and maximum and window and size and attack).clm. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/10/14 16:52 |
| S38 | 299 | ((726/22) or (726/23)).CCLS. | USPAT | OR | OFF | 2006/05/15 14:11 |
| S39 | 4 | ("5107489" \| "5790808" \| "5892903" \| "6049546").PN. | US-PGPUB; USPAT; USOCR | OR | ON | 2006/05/15 15:11 |
| S40 | 3042 | ((713/170) or (709/224)).CCLS. | USPAT | OR | OFF | 2006/05/15 15:11 |
| S41 | 422 | S40 and (@pd > "20051013") | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 15:12 |
| S42 | 19 | S40 and (@pd > "20051013") and (denial near2 service) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 15:12 |
| S43 | 2 | (("20020145976") or ("20030191844")).PN. | US-PGPUB; USPAT | OR | OFF | 2006/05/15 16:48 |
| S44 | 26 | discard near4 segments near10 buffer | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 17:00 |
| S45 | 549 | discard near4 (segment packet) near10 buffer | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 16:49 |
| S46 | 1 | discard near4 (segment packet) near10 (re-assembly reassembly) adj buffer | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 16:50 |
| S47 | 0 | discard$3 near4 all adj (segment packet) near10 buffer | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 17:01 |

# EAST Search History

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|---|---|---|---|---|---|---|
| S48 | 3 | discard$3 near4 (all every) adj (segment packet) near10 buffer | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 17:02 |
| S49 | 3 | (remov$3 discard$3 eliminat$4) near4 (all every) adj (segment packet) near10 buffer | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 17:03 |
| S50 | 3 | (remov$3 discard$3 eliminat$4 truncat$4) near4 (all every) adj (segment packet) near10 buffer | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 17:06 |
| S51 | 31 | (remov$3 discard$3 eliminat$4 truncat$4) near4 (all every) adj (segment packet) | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 17:09 |
| S52 | 735 | (empty) near4 (segment packet) near10 buffer | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 17:09 |
| S53 | 668 | (empty) near4 (segment packet) near4 buffer | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 17:10 |
| S54 | 1 | remov$3 adj (packet segment) adj overlap | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 17:11 |
| S55 | 1 | remov$3 adj (packet segment) adj overlap$4 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 17:11 |

# EAST Search History

| | | | | | | |
|---|---|---|---|---|---|---|
| S56 | 3 | (remov$3 discard$3 ) adj (packet segment) adj overlap$4 | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2006/05/15 17:11 |

5/16/06



Terms used
**buffer window segment packet frame sequence prevent attack**

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1 Network Protocols

Andrew S. Tanenbaum

December 1981 **ACM Computing Surveys (CSUR)**, Volume 13 Issue 4

**Publisher:** ACM Press

Full text available: pdf(3.37 MB) Additional Information: full citation, references, citings, index terms

2 Rethinking the TCP Nagle algorithm

J. C. Mogul, G. Minshall

January 2001 **ACM SIGCOMM Computer Communication Review**, Volume 31 Issue 1

**Publisher:** ACM Press

Full text available: pdf(1.65 MB) Additional Information: full citation, abstract, index terms

Modern TCP implementations include a mechanism, known as the Nagle algorithm, which prevents the unnecessary transmission of a large number of small packets. This algorithm has proved useful in protecting the Internet against excessive packet loads. However, many applications suffer performance problems as a result of the traditional implementation of the Nagle algorithm. An interaction between the Nagle algorithm and TCP's delayed acknowledgement policy can create an especially severe pro ...

3 Multimedia coding and security: Content-based UEP: a new scheme for packet loss recovery in music streaming

Ye Wang, Ali Ahmaniemi, David Isherwood, Wendong Huang

November 2003 **Proceedings of the eleventh ACM international conference on Multimedia**

**Publisher:** ACM Press

Full text available: pdf(415.11 KB) Additional Information: full citation, abstract, references, citings, index terms

Bandwidth efficiency and error robustness are two essential and conflicting requirements for streaming media content over error-prone channels, such as wireless channels. This paper describes a new scheme called content-based unequal error protection (C-UEP), which aims to improve the user-perceived QoS in the case of packet loss. We use music streaming as an example to show the effectiveness of the new concept. C-UEP requires only a small fraction of the redundancy used in existing forward erro ...

**Keywords:** audio coding and streaming, content-based unequal error protection (C-UEP), error robustness, packet loss recovery, prioritized resource allocation, user-perceived QoS

4 Link and channel measurement: A simple mechanism for capturing and replaying wireless channels

Glenn Judd, Peter Steenkiste

August 2005 **Proceeding of the 2005 ACM SIGCOMM workshop on Experimental approaches to wireless network design and analysis E-WIND '05**

**Publisher:** ACM Press

Full text available: pdf(6.06 MB) Additional Information: full citation, abstract, references, index terms

Physical layer wireless network emulation has the potential to be a powerful experimental tool. An important challenge in physical emulation, and traditional simulation, is to accurately model the wireless channel. In this paper we examine the possibility of using on-card signal strength measurements to capture wireless channel traces. A key advantage of this approach is the simplicity and ubiquity with which these measurements can be obtained since virtually all wireless devices provide the req ...

**Keywords:** channel capture, emulation, wireless

5 Local networks

William Stallings

March 1984 **ACM Computing Surveys (CSUR)**, Volume 16 Issue 1

**Publisher:** ACM Press

Full text available: pdf(3.01 MB) Additional Information: full citation, abstract, references, citings, index terms, review

The rapidly evolving field of local network technology has produced a steady stream of local network products in recent years. The IEEE 802 standards that are now taking shape, because of their complexity, do little to narrow the range of alternative technical approaches and at the same time encourage more vendors into the field. The purpose of this paper is to present a systematic, organized overview of the alternative architectures for and design approaches to local networks.

...

6 Distributed operating systems

Andrew S. Tanenbaum, Robbert Van Renesse

December 1985 **ACM Computing Surveys (CSUR)**, Volume 17 Issue 4

**Publisher:** ACM Press

Full text available: pdf(5.49 MB) Additional Information: full citation, abstract, references, citings, index terms, review

Distributed operating systems have many aspects in common with centralized ones, but they also differ in certain ways. This paper is intended as an introduction to distributed operating systems, and especially to current university research about them. After a discussion of what constitutes a distributed operating system and how it is distinguished from a computer network, various key design issues are discussed. Then several examples of current research projects are examined in some detail ...

7 Safely executing untrusted code: Upgrading transport protocols using untrusted mobile code

Parveen Patel, Andrew Whitaker, David Wetherall, Jay Lepreau, Tim Stack

October 2003 **Proceedings of the nineteenth ACM symposium on Operating systems principles**
**Publisher:** ACM Press
Full text available: pdf(248.86 KB) Additional Information: full citation, abstract, references, citings, index terms

In this paper, we present STP, a system in which communicating end hosts use untrusted mobile code to remotely upgrade each other with the transport protocols that they use to communicate. New transport protocols are written in a type-safe version of C, distributed out-of-band, and run in-kernel. Communicating peers select a transport protocol to use as part of a TCP-like connection setup handshake that is backwards-compatible with TCP and incurs minimum connection setup latency. New transports ...

**Keywords:** TCP-friendliness, deployment, implementation, transport protocols, untrusted mobile code

8 Technical papers: Link layer-based TCP optimisation for disconnecting networks
James Scott, Glenford Mapp
October 2003 **ACM SIGCOMM Computer Communication Review**, Volume 33 Issue 5
**Publisher:** ACM Press
Full text available: pdf(368.01 KB) Additional Information: full citation, abstract, references, citings

This paper discusses a link layer approach to improving TCP performance in the face of periodic network disconnections. Network disconnections are encountered in many scenarios, including being out-of-range in a wireless network, during network handoff, and also in the case of Networked Surfaces, a novel LAN technology which provides the motivation for this work.A "smart link layer" employing repetition of selected packets at reconnection time is shown to improve TCP's utilisation of a disconnec ...

**Keywords:** TCP, disconnection, link layer, mobile networking

9 A holistic approach to service survivability
Angelos D. Keromytis, Janak Parekh, Philip N. Gross, Gail Kaiser, Vishal Misra, Jason Nieh, Dan Rubenstein, Sal Stolfo
October 2003 **Proceedings of the 2003 ACM workshop on Survivable and self-regenerative systems: in association with 10th ACM Conference on Computer and Communications Security**
**Publisher:** ACM Press
Full text available: pdf(1.58 MB) Additional Information: full citation, abstract, references, index terms

We present SABER (Survivability Architecture: Block, Evade, React), a proposed survivability architecture that blocks, evades and reacts to a variety of attacks by using several security and survivability mechanisms in an automated and coordinated fashion. Contrary to the ad hoc manner in which contemporary survivable systems are built-using isolated, independent security mechanisms such as firewalls, intrusion detection systems and software sandboxes-SABER integrates several different techno ...

**Keywords:** intrusion detection, overlay networks, survivability

10 Measurement: A high-level programming environment for packet trace anonymization and transformation
Ruoming Pang, Vern Paxson
August 2003 **Proceedings of the 2003 conference on Applications, technologies, architectures, and protocols for computer communications**

**Publisher:** ACM Press

Full text available: pdf(251.27 KB) Additional Information: full citation, abstract, references, citings, index terms

Packet traces of operational Internet traffic are invaluable to network research, but public sharing of such traces is severely limited by the need to first remove all sensitive information. Current trace anonymization technology leaves only the packet headers intact, completely stripping the contents; to our knowledge, there are no publicly available traces of any significant size that contain packet payloads. We describe a new approach to transform and anonymize packet traces. Our tool provide ...

**Keywords:** anonymization, internet, measurement, network intrusion detection, packet trace, privacy, transformation

11 Computing curricula 2001

September 2001 **Journal on Educational Resources in Computing (JERIC)**

**Publisher:** ACM Press

Full text available: pdf(613.63 KB) html(2.78 KB) Additional Information: full citation, references, citings, index terms

12 Session 2: Review and analysis of synthetic diversity for breaking monocultures

James E. Just, Mark Cornwell

October 2004 **Proceedings of the 2004 ACM workshop on Rapid malcode**

**Publisher:** ACM Press

Full text available: pdf(356.14 KB) Additional Information: full citation, abstract, references, index terms

The increasing monoculture in operating systems and key applications and the enormous expense of N-version programming for custom applications mean that lack of diversity is a fundamental barrier to achieving survivability even for high value systems that can afford hot spares. This monoculture makes flash worms possible. Our analysis of vulnerabilities and exploits identifies key assumptions required to develop successful attacks. We review the literature on synthetic diversity techniques, f ...

**Keywords:** diversity, n-version programming, vulnerability

13 Papers from Hotnets-II: Unveiling the transport

Jeffrey Mogul, Lawrence Brakmo, David E. Lowell, Dinesh Subhraveti, Justin Moore

January 2004 **ACM SIGCOMM Computer Communication Review**, Volume 34 Issue 1

**Publisher:** ACM Press

Full text available: pdf(120.97 KB) Additional Information: full citation, abstract, references

Traditional application programming interfaces for transport protocols make a virtue of hiding most internal per-connection state. We argue that this information-hiding precludes many potentially useful application features and performance optimizations. We advocate a disciplined, portable, and secure interface that gives applications both "get" and "set" access to transport connection state.

14 Attacking passwords and bringing down the network: Misbehaving TCP receivers can cause internet-wide congestion collapse

Rob Sherwood, Bobby Bhattacharjee, Ryan Braud

November 2005 **Proceedings of the 12th ACM conference on Computer and communications security CCS '05**

**Publisher:** ACM Press
Full text available: pdf(258.05 KB) Additional Information: full citation, abstract, references, index terms

An *optimistic* acknowledgment (opt-ack) is an acknowledgment sent by a misbehaving client for a data segment that it has not received. Whereas previous work has focused on opt-ack as a means to greedily improve end-to-end performance, we study opt-ack exclusively as a denial of service attack. Specifically, an attacker sends optimistic acknowledgments to many victims in parallel, thereby amplifying its effective bandwidth by a factor of 30 million (worst case). Thus, even a relatively mode ...

**Keywords:** congestion control, distributed denial of service

15 Session summaries from the 17th symposium on operating systems principle (SOSP'99)
Jay Lepreau, Eric Eide
April 2000 **ACM SIGOPS Operating Systems Review**, Volume 34 Issue 2
**Publisher:** ACM Press
Full text available: pdf(3.15 MB) Additional Information: full citation, index terms

16 Single-packet IP traceback
Alex C. Snoeren, Craig Partridge, Luis A. Sanchez, Christine E. Jones, Fabrice Tchakountio, Beverly Schwartz, Stephen T. Kent, W. Timothy Strayer
December 2002 **IEEE/ACM Transactions on Networking (TON)**, Volume 10 Issue 6
**Publisher:** IEEE Press
Full text available: pdf(528.41 KB) Additional Information: full citation, abstract, references, citings, index terms

The design of the IP protocol makes it difficult to reliably identify the originator of an IP packet. Even in the absence of any deliberate attempt to disguise a packet's origin, widespread packet forwarding techniques such as NAT and encapsulation may obscure the packet's true source. Techniques have been developed to determine the source of large packet flows, but, to date, no system has been presented to track individual packets in an efficient, scalable fashion. We present a hash-based techn ...

**Keywords:** IP traceback, computer network management, computer network security, denial of service (DoS), network fault diagnosis, wide-area networks (WANs)

17 Storage protocol designs: A study of iSCSI extensions for RDMA (iSER)
Mallikarjun Chadalapaka, Hemal Shah, Uri Elzur, Patricia Thaler, Michael Ko
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Full text available: pdf(281.32 KB) Additional Information: full citation, abstract, references, index terms

The iSCSI protocol is the IETF standard that maps the SCSI family of application protocols onto TCP/IP enabling convergence of storage traffic on to standard TCP/IP fabrics. The ability to efficiently transfer and place the data on TCP/IP networks is crucial for this convergence of the storage traffic. The iWARP protocol suite provides Remote Direct Memory Access (RDMA) semantics over TCP/IP networks and enables efficient memory-to-memory data transfers over an IP fabric. This paper studies the ...

**Keywords:** DA, DDP, DI, Datamover, MPA, RDMA, RDMAP, SCSI, Verbs, iSCSI, iSER, iWARP

18 Power reduction techniques for microprocessor systems

Vasanth Venkatachalam, Michael Franz
September 2005 **ACM Computing Surveys (CSUR)**, Volume 37 Issue 3
**Publisher:** ACM Press
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Power consumption is a major factor that limits the performance of computers. We survey the "state of the art" in techniques that reduce the total power consumed by a microprocessor system over time. These techniques are applied at various levels ranging from circuits to architectures, architectures to system software, and system software to applications. They also include holistic approaches that will become more important over the next decade. We conclude that power management is a ...

**Keywords:** Energy dissipation, power reduction

19 Fast and flexible application-level networking on exokernel systems

Gregory R. Ganger, Dawson R. Engler, M. Frans Kaashoek, Hector M. Briceño, Russell Hunt, Thomas Pinckney
February 2002 **ACM Transactions on Computer Systems (TOCS)**, Volume 20 Issue 1
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Application-level networking is a promising software organization for improving performance and functionality for important network services. The Xok/ExOS exokernel system includes application-level support for standard network services, while at the same time allowing application writers to specialize networking services. This paper describes how Xok/ExOS's kernel mechanisms and library operating system organization achieve this flexibility, and retrospectively shares our experiences an ...

**Keywords:** Extensible systems, OS structure, fast servers, network services

20 Detection and prevention of stack buffer overflow attacks

Benjamin A. Kuperman, Carla E. Brodley, Hilmi Ozdoganoglu, T. N. Vijaykumar, Ankit Jalote
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How to mitigate remote attacks that exploit buffer overflow vulnerabilities on the stack and enable attackers to take control of the program.

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